taken under the auspices of the university, and it is not intended that it supersede, as regards this State, the work of the central office at Washington (D.C.), but to supplement that work in collecting data for a more satisfactory treatment of the climatology and storms of that state. We strongly commend this scheme, and earnestly hope that Prof. Nipher will succeed in extending his network of stations till all parts of the state be adequately represented, especially since telegraphic stations everywhere are by far too few to meet the requirements of the more important and pressing problems of meteorology. We have the further satisfaction in learning that a similar weather service is contemplated in the State of Kentucky.

HIGH TEMPERATURE OF NOVEMBER LAST.—M. Brounoff, of the St. Petersburg Physical Observatory, publishes in the Russian *Golos*, December 10, an interesting note as to the unusually high temperature of St. Petersburg during November last. The mean temperature of that month was as high as 39°·4, or 10°·3 higher than the mean temperature deduced from ninety years' observations, and 4°·9 above the very high mean temperature of November observed at St. Petersburg in 1851. Throughout the month the thermometer never fell below 32°·0. It is worthy of notice that during all the other months of this year the temperature was lower than the means deduced from ninety years' observations. An unusually high temperature prevailed in November over nearly the whole of Europe and Western Siberia, except North Scotland, Southern Italy, the middle Danube, and the two shores of the Caspian. The highest above the average, 15°·7, was observed at Archangel, and the line of 9°·0 runs from the Upper Volga to Stockholm, and thence straight north. The proximate cause of such unusually high temperature was the abnormal predominance of barometrical minima with south-westerly winds, which passed over Europe during November last. Thus, the number of these minima in November has been forty-two during the last five years, whereas there occurred thirteen during November last, the one thus following the other almost without interruption.

TEMPERATURE OF VIENNA.—Among other points treated in a recent paper by Dr. Hann to the Vienna Academy, "On the Temperature of Vienna, according to a Hundred Years' Observations," is the influence of the frequency of sun-spots on the mean temperature of summer, winter, and the year. Neither in the temperatures arranged according to the separate cycles of sun-spot frequency, nor in the averages of these from all the nine cycles (1775 to 1876) is there recognisable a distinct periodicity of the heat variations, which can be connected with the period of sun-spot frequency. Placing in the individual cycles the averages of every three years' temperatures, corresponding to the minimum and maximum of the spots, opposite each other, it is found that in five cycles out of nine the minimum years have indeed a considerably greater heat than the corresponding maximum years. But in three cycles precisely the opposite is the case, and in one cycle the difference is almost *nil*. Dr. Hann further inquires whether one may with any probability draw inferences from the temperature character of one season with regard to that of the next, and the next again. He finds that if the temperature-anomaly of one season reach a considerable amount (a divergence of 1° C. or upwards), the probability that the following season will diverge in the same sense from the average value is 0·68; the probability that a very cold or warm winter will be followed by a cold or hot summer respectively, is even 0·70. On the other hand, the probability of an agreement of the temperature-anomaly of a winter with that of the previous summer is only 0·45. In his paper Dr. Hann also gives a comparison of the temperatures of the meteorological and astronomical observatories.

GEOGRAPHICAL NOTES

MR. STANLEY.—Mr. Stanley arrived in London on Tuesday. From the time that he emerged at Emboma from his ever-memorable dash into the unknown region west of Nyangwé to his arrival at Folkestone, his journey homewards has been a well-earned ovation. Everyone, from the Governor downwards, at the Cape vied in doing him honour; at Cairo the Khedive conferred upon him two of the highest orders of merit; at Rome he received the Victor Emmanuel Gold Medal of Merit, arriving too late, alas! to receive it from the hands of its donor, though it was accompanied by a sealed letter from the late King, speaking in high terms of Mr. Stanley's discoveries and his services to humanity and civilisation; Turin, Milan, and Naples sent welcomes to him; at Marseilles the Geographical Society, the Chamber of Commerce, and the Municipality presented him each with a medal; at Paris the Geographical Society fêted him in splendid style, the President of the Republic sending his representative the Minister of Public Instruction presenting him with the high honour of the palms of Officier de l'Instruction Publique, and the President of the Geographical Society telling him he should be gold medallist of the Society for 1878. We expressed confidence last week that our own Geographical Society would lead the movement in this country for giving Mr. Stanley a reception worthy of the great work he has achieved, and we rejoice to see that our confidence has been justified. The Society are to invite Mr. Stanley to dinner, and also to read a paper on his discoveries, "at St. James's Hall or elsewhere." We feel sure that St. James's Hall will be quite inadequate for the accommodation of all who will wish to see and listen to the story of one of the greatest of pioneer-explorers; so that, after all, the announcement made in the *Times* last week, that the Albert Hall was to be taken for the purpose, is likely enough to be correct. There will certainly be no difficulty in filling it. Everyone will wait with impatience the publication of Mr. Stanley's work; for although a fair idea of what he has done has been obtained from his occasional letters in the *Telegraph*, there must be many things to tell that could not be set down in the circumstances under which these letters were written.

THE MARQUIS ANTINORI.—From another telegram received by the Geographical Society at Rome, it appears that the Marquis Antinori, contrary to his first intention, does not return to Italy, but has started again with his companions on a new tour southward from Shoa. Signor Martini alone comes home with the scientific collections.

AFRICAN EXPLORATION.—Reports from Berlin state that in the budget for the current year the sum of 100,000 marks (5,000*l.*) is asked for the continuation of the exploration of Central Africa. This is considerably more than in the preceding years; the rise in the sum demanded is justified by reference to the efforts of German private societies and scientific men.

THE NORTHERN PAMIR.—The last number of the *Izvestia* of the Russian Geographical Society contains some new and valuable information on the little-known tracts of the Northern Pamir, which have hitherto been a blank on our best maps. This information has been compiled from notes taken last summer by M. Korostovtseff during his journey to the Alai Valley and the Northern Pamir highlands. The valley of Alai, visited first by M. Fedchenko, runs north-east and south-west for forty-five miles, and is from thirteen to twenty miles wide. It is inclosed between high mountains, the Kaupmann Peak reaching 25,000 feet. Forests are found only in the north-eastern part of the valley (11,000 feet above the sea) which is part of the dominions of the Khan of Kashgar, while the south-western part (8,000 feet high),

© 1878 Nature Publishing Group

watered by the Kyzyl-su River, is covered with luxurious Alpine pasturage, and therefore becomes in summer the feeding ground for immense herds of cattle belonging to the Fergana, Kashgar, Shungan, and Karateghin Kirghizes. A sandy cleft, Tash-kurgan, leads from the Alai Valley to the Pamir Highlands. After a journey of forty-five miles along this cleft, and after having crossed the Kyzyl-art Pass, 14,017 feet high, M. Korostovtseff reached the salt-lake, Kara-kul, twenty-seven miles long and twelve miles wide, 13,194 feet above the sea-level. Its sandy banks are quite bare, and the surrounding stony hills bear no traces of vegetation; it is only close by the deep-blue waters of the lake that the traveller discovers here and there a low and dry bush. Thence M. Korostovtseff turned south-east, entered the cleft Alabaital, and reached, by a gentle slope, the pass of the same name, 15,314 feet high, whence he had to descend on the very steep southern slope, to the valley of the Chan-su River, quite bare and covered with snow-white deposits of salt. The valley of a rivulet, Uz-bel, tributary of Chansu—a sandy desert twenty miles long—and the Uz-bel Pass, 15,195 feet high, were followed east to reach the valley of Sary-kol, 14,300 feet above the sea-level, and covered with a very scarce vegetation; here some small rivulets give rise to the Kashgar-daria River. Thus the general characters of the northern part of the Pamir table-land are high valleys, flat, open, bare, and sandy, never descending below some 13,000 feet, with blue salt lakes and salt deposits on their dry bottom; relatively low mountains, the passes between which are only some 1,000 or 2,000 feet above the bottom of the valleys, the peaks being covered with perpetual snow when they exceed an altitude of 15,000 or 16,000 feet; no inhabitants, and a very scarce vegetation. Such is the hitherto mysterious "roof of the world" (Pamir). From Sary-kol M. Korostovtseff was compelled to return. He died a short time after his return, without being able to publish the results of his most interesting journey or describe the valuable collections he obtained.

THE "NERTHUS" OF TACITUS.—Dr. Michelsen, of Schleswig, has just published a pamphlet in which he discusses that remarkable and often-mentioned Nerthus-island, which, according to the description of Tacitus, with its sacred lake and forest, formed the centre of a divine service of seven closely connected communities. Formerly the island of Rügen, or the so-called "Land Oldenburg," was thought to be the island in question. Dr. Michelsen, however, points out that the island of Alsen is the one meant by Tacitus. He states that the name signifies "sanctuary" or "temple-island," and that the sacred lake and forest still exist in the north-west of Norburg on the Alsensund, under the names of "Hellewith and Hellesö" (*heilige Wald und heilige See*—holy wood and holy sea). The inhabitants of that district still call the village of Hellewith, situated near the forest, Hellod (*heiliges Eigen*—holy own); and in the existing remains of the old forest there is a well-preserved sacrificial altar consisting of enormous blocks of granite. Dr. Michelsen gives a number of other interesting proofs for the correctness of his conjecture, and also remarks that he has partly discovered the names of the seven Nerthus people in villages of the Sundewitt district.

VENEZUELA.—In the January session of the Berlin Geographical Society, Dr. Sachs gave a description of his recent journey to Venezuela, for the purpose of studying the gymnotus in its native haunts. Humboldt's sketch of the Llanos was completed and corrected in some points. This great plain, formerly an inland sea, is 600 feet above the sea in its upper part, and but 200 in its lower part, a difference which accounts for the fact that the grass, but 1 to 2 feet in height in the upper portion, rises above the head of the river in the lower region. The decrease in the number of cattle on the Llanos of late years has led to a rapid extension of the arboreal growth. The Llaneros are a peculiar people, arising from a mixture of the white, red, and black races, and standing on a low grade of civilisation, their religion consisting in the adoration of a few saints, and marriages being rare. Humboldt's familiar description of the capture of the electric eel, by driving horses into the streams frequented by it, as the customary method in the land, is regarded as resting on an error. No one in the region was acquainted with it, and it was found impracticable to carry out. The scientific results of Dr. Sach's observations will be published shortly.

THE INDUS.—The course of the Indus river from the point where it leaves Cashmere down to where it enters English territory, about 120 miles below Darband, has recently been explored in detail by a Punjaub surveyor, and our geographical knowledge of the river has thus been considerably augmented, while valuable topographical material has been obtained. Of course Capt. Carter had previously determined, in a general way, the course of the river in the districts named, by his trigonometrical measurements of the heights of the mountain summits on both banks of the Indus.

NEW GUINEA.—Dr. E. T. Hamy, in the just issued November part of the *Bulletin* of the Paris Geographical Society, describes in considerable detail the results of his examination of an old map of New Guinea, for the purpose of showing how much had been done for its discovery by the Spanish navigators of the sixteenth and seventeenth centuries (1528–1606). The map, which serves as the basis of Dr. Hamy's paper, is contained in the atlas of Pierre Martier, published at Amsterdam in 1700. The data for this and other maps in the atlas had been collected by Frémont d'Ablancourt while in Portugal, and the many names on New Guinea would show that by the sixteenth century its coasts had been pretty well explored all round, though its shape is very inaccurately laid down.

NOTES

WE give some account to-day of the life and work of the late M. Becquerel, and next week we hope to do the same for M. Regnault, who died two days after M. Becquerel, in his 68th year. M. Victor Regnault was born at Aix-la-Chapelle, in 1810. He was Professor of Physics in the College of France, and of Chemistry in the Polytechnic School; he also held for some time the Directorship of the Porcelain Manufactory of Sèvres. His researches in the several branches of physics and chemistry published in the *Memoirs* of the French Academy of Sciences, and many other scientific journals, are numerous, and of the greatest value. Of these perhaps his publications on the expansion of elastic fluids, the determination of the densities of gases, the measurement of temperatures, and the determinations of the specific heats of liquids, solids, and gases, are the most important, and have brought his name most prominently before the world. He has also written many valuable papers on physiological questions. M. Regnault was elected a member of the Academy of Sciences in 1840, and in 1850 was created an officer of the Legion of Honour.

THE Council of the Royal Society of Edinburgh have awarded the Neill medal to Dr. Ramsay Traquair, for his paper on the Structure and Affinities of *Tristichopteris alatus*, Egerton, being one of an important series of contributions to the knowledge of the structure of recent and fossil fishes.

WE are informed that the Pennsylvania Railway Company are disposed to grant very favourable terms to any European astronomers who, in their private capacity, may wish to go to America to observe the approaching eclipse of the sun. It is stated that for less than half the usual fares astronomers will be conveyed from New York, Washington, or Baltimore to Denver. We

© 1878 Nature Publishing Group